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**DETERMINANTS OF LOWER BACK PAIN AMONGST
GENERAL WORKERS IN
UNIVERSITI UTARA MALAYSIA
(UUM)**

By



ADRIAN SAMUEL PEREIRA

UUM
Universiti Utara Malaysia

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(Occupational Safety and Health Management)**



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ABSTRACT

Rising incident of lower back pain among general workers is a concern in Malaysian workforce. The purpose of this research is to investigate the influence of body postures, workplace design and jobs demand to lower back pain amongst general workers populations in University Utara Malaysia (UUM). This study was conducted by using questionnaire for back pain and Dutch Musculoskeletal questionnaire. The findings of body postures, workplace design and jobs demand in UUM general workers was found to play the greatest role in influencing to lower back pain. This study definitively answers the question regarding correlation between the three main dominant factors that contributing to lower back pain and significant regression on workplace design. Further studies are needed to establish causal relationship and develop preventive measures.

Keyword: lower back pain, body postures, workplace design, jobs demand, general workers.

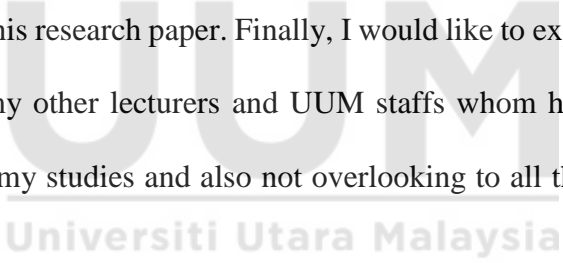
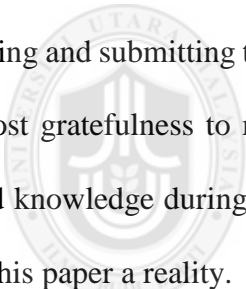
ABSTRAK

Kejadian sakit belakang yang semakin meningkat dalam kalangan pekerja am merupakan kebimbangan yang dalam tenaga pekerja Malaysia. Objektif penyelidikan ini adalah untuk mengkaji pengaruh antara postur badan, reka bentuk tempat kerja dan permintaan pekerjaan terhadap kesakitan belakang dalam kalangan populasi pekerja am di Universiti Utara Malaysia (UUM). Kajian ini dilaksanakan menggunakan Soal Selidik untuk sakit tulang belakang dan Soal Selidik Muskuloskeletal Belanda. Penemuan postur badan, suasana tempat kerja dan permintaan pekerjaan oleh pekerja am UUM didapati mempunyai sumbangan terbanyak dalam mempengaruhi sakit tulang belakang. Kajian ini secara pasti telah menjawab persoalan mengenai korelasi antara postur badan, reka bentuk tempat kerja dan permintaan pekerjaan terhadap sakit belakang bawah dalam kalangan pekerja umum dan regresi yang signifikan terhadap reka bentuk tempat kerja. Kajian lebih lanjut diperlukan untuk menjalin hubungan kausal dan mengukuhkan langkah pencegahan.

Kata Kunci: Sakit belakang, postur badan, reka bentuk tempat kerja, permintaan pekerjaan, pekerja am.

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List of Abbreviation

UUM – University Utara Malaysia

LBP – Lower Back Pain

QOL - Quality Of Life

GBD - Global Burden of Disease

MSD - Musculoskeletal Disease

DKK - Danish Krone

BP - Back Pain

WP - Workplace

OPA - Occupational Physical Activity

FCE - Functional Capacity Evaluations

DALY - Disability Adjusted Life Years

CHAPTER 1

INTRODUCTION

Most low back pain is the effect of an injury, such as muscle sprains or strains due to impulsive movements or poor body mechanism while working. Low back pain is caused by diseases, for instant, as cancer of the spinal cord, a ruptured or herniated disc, sciatica, arthritis, kidney infections, and infections of the spine. A study by Islam, et al. (2019) lower back pain (LBP) is related with different hazard factors, including sex, age, and lifestyle, psychosocial profile, and physical requests of the working environment, social helps, and pain recognition.

Critical back pain might stay from an hours to months, whereas chronic back pain is soreness which goes on for several months. According to Ardakani, Leboeuf, Jacques and Walker (2020) a scene of low back pain is characterized as a time of pain in the lower back going on for over days, went before continues time of any event that doesn't present low back pain. Low back pain is more probable happens to people from the age of 30 to 50 as research done by Ahmed, Mehdar and Moawad (2020) with the occurrence rises and with heights focusing at age of 35 and 55.

Human being likewise reduce muscle tone, whereby it increasingly inclined the occurrence, for this, the reason reinforcing lower back stucture and utilizing great body movement are useful in forestalling low back pain as mentioned by Kett and Sighting (2020) that brief span tissue control can be a powerful dynamic saperation to delayed sitting periods to forestall musculoskeletal problem, for example, musculoskeletal distress like back pain.

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Research Questionnaire



DATE :

Dear Respondent,

I am a Postgraduate student from Universiti Utara Malaysia and carrying out a survey regarding Determinants of Lower Back Pain Among General Worker and Clerks in Universiti Utara Malaysia (UUM), in order to fulfil the Master Degree requirements. The research objective is to determine the lower back pain factor among academician.

Attached with this letter is a questionnaire that addresses the Determinants of Lower Back Pain Among General Worker in Universiti Utara Malaysia (UUM). I realize that your time is priceless and very precious. However, your involvement in this study will contribute to the success of this study.

There is no right or wrong answer to the statements listed in the questionnaire. Your sincerity and honesty is highly required in answering these statements. Please be rest assured that all your responses will be kept confidential and will be strictly used for the academic research purpose only.

With this, I highly appreciate your cooperation and participation in this study to convey my thanks in advance.

If you are interest in this study and its outcome, please do not hesitate to contact me via my email at adrianpereira1704@gmail.com or call me at +6012-6590979.

Thank you for your time and attention.

Yours sincerely,

ADRIAN SAMUEL PEREIRA,
Universiti Utara Malaysia (UUM), Melaka

Tuan/Puan,

Saya merupakan pelajar Sarjana dari Universiti Utara Malaysia yang sedang menjalankan satu kajian mengenai ‘Determinants of Lower Back Pain Among General Worker and Clerks in Universiti Utara Malaysia (UUM).’ bagi memenuhi pra-syarat Sarjana dari Universiti Utara Malaysia. Objektif kajian ini adalah untuk mengenalpasti sakit belakang dikalangan pengajar.

Bersama-sama ini disertakan soal selidik berkaitan ‘Determinants of Lower Back Pain Among General Worker in Universiti Utara Malaysia (UUM).’ Saya sedar bahawa masa Anda amat berharga dan bermakna, namun penglibatan Anda dalam tinjauan ini, akan menyumbang kepada kejayaan kajian ini.

Tidak ada jawapan yang betul atau salah dalam soal selidik ini. Hanya keikhlasan dan kejujuran Anda diperlukan dalam menjawab soalan. Untuk makluman semua maklumbalas Anda akan dirahsiakan dan hanya digunakan bagi tujuan penyelidikan akademik sahaja.

Saya sangat menghargai kerjasama dan penglibatan Anda dalam kajian ini dan saya dahului dengan ucapan terima kasih.

Jika Anda berminat dengan kajian ini dan dapatan kajiannya, sila hubungi saya melalui e-mel di adrianpereira1704@gmail.com atau menghubungi saya di talian +6012-6590979.

Terima kasih atas kerjasama dan perhatian Anda.

Yang benar,

ADRIAN SAMUEL PEREIRA,
Universiti Utara Malaysia (UUM), Melaka

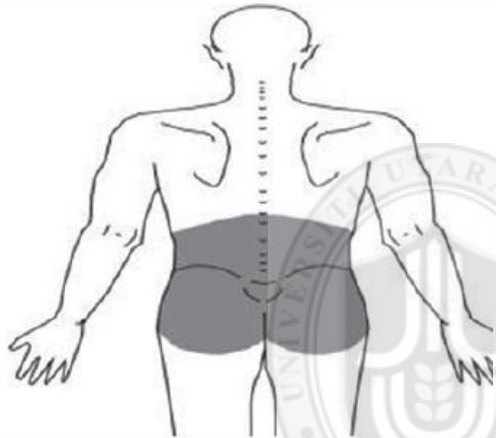
SECTION A : DEMOGRAPHIC STATEMENTS

Please fill in blank and tick (✓) in the appropriate boxes that corresponds to your answer to each of the following questions below.

Sila isikan tempat kosong dan tandakan (✓) untuk mewakili jawapan Anda pada semua soalan di bawah.

Item No.	Item	Answer / Jawapan						
A1	Age / Umur	20 – 25 ()	26 – 30 ()	31 – 35 ()	36 – 40 ()	41 – 45 ()	46 – 50 ()	51 Above / Keatas ()
A2	Gender / Jantina	Male / Lelaki ()	Female / Perempuan ()					
A3	Ethnic / Bangsa	Malay / Melayu ()	Chinese / Cina ()	Indian / India ()	Others / Lain Lain			
A4	Marital status / Status Perkahwinan	Single / Bujang ()	Married / Berkahwin ()	Divorced / Bercerai ()				
A5	Occupation Service / Tempoh Perkhidmatan	1-2 years / tahun ()	3-5 years / tahun ()	5 years above / 5 tahun keatas ()				
A6	Level of education / Peringkat Pelajaran	None / Tiada ()	Primary / Rendah ()	Elementary / Menengah ()	High School or More / Tinggi atau lebih ()	Others : State it / Lain lain : Nyatakan ()		

SECTION B : PAIN FEATURES

Item No.	Item						
B1	Do you have back pain at present? / Adakah Anda mempunyai sakit belakang sekarang (Mark on body diagram / Tanda pada rajah badan)	Yes / Ada ()	No / Tiada ()				
							
B2	How long do you have this back pain? / Berapa lama Anda mengalami sakit belakang ini?	Less than 7 days / Kurang dari 7 hari ()	7 days-7 weeks / 7 hari-7 minggu ()	More than 7 weeks / Lebih daripada 7 minggu ()			
B3	What do you think is the cause of your back pain? / Pada Pandangan Anda, Apakah penyebab sakit belakang Anda?	Trauma or injury / Trauma atau kecederaan ()	Sudden movement / Pergerakan mendadak ()	Disease / Penyakit ()	Lifting of a load ()		
		Bad posture for a long time / Postur yang teruk dalam	Faulty equipment / Peralatan yang rosak	Cannot say / Tidak pasti ()	Any other / Lain lain ()		

		jangkamasa yang lama ()	()				
B4	Did the pain start / Adakah kesakitan bermula	Suddenly / tiba-tiba ()	Gradually / Secara beransur-ansur ()				
B5	Is your pain / Adakah kesakitan Anda	Constant / Berterusan ()	Intermittent / berselang-seli ()				
B6	How severe is your back pain? Scale 1 - 10 / Berapa teruk sakit belakang Anda? Skala 1- 10	State It / Nyatakan ()					
B7a	The pain go in to your leg or foot. / sakit melarat hingga ke kaki Anda	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
B7b	Where does it goes? / Di mana sakitnya?	Anterior thigh / Paha Anterior ()	Posterior thigh / Paha posterior ()	Buttocks / Punggung ()	Leg or foot / Kaki ()	None / Tiada	
B8	How will you best define the nature of your complaint? / Bagaimanakah Anda akan menentukan kritiria aduan Anda?	Stiffness / Kekakuan ()	Nagging feeling / Lengguh ()	Numbness / Kebas ()	Tingling / Sesemut ()		
		Loss of strength / Kehilangan kekuatan ()	Cramp / Kejang ()	Pain / Sakit ()	Other / Lain-lain ()		

B9	When do you feel the pain during the day? / Bilakah Anda merasa sakit pada waktu siang?	Morning / Pagi ()	Noon / Tengah hari ()	Evening / Petang ()	Before bed time / Sebelum tidur ()		
		During sleep / Semasa tidur ()	Whole day / Setiap hari ()	Any time during day / Bila-bila masa hari siang ()			
B10	You suffered from any unexplained weight loss in the past few days. / Anda mengalami kehilangan berat yang tidak dapat dijelaskan dalam beberapa hari yang lalu.	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
B11	You suffered from any fever or chills at night. / Anda mengalami demam atau menggigil pada waktu malam.	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
B12	The back pain become worse at night. / Sakit belakang semakin buruk pada waktu malam.	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
B13	You suffered from any bladder or bowel dysfunction. / Anda mengalami masalah pundi kencing atau usus.	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
B14	You suffered from any progressive or severe neurological deficit in the lower extremity. / Anda mengalami sebarang defisit neurologi yang progresif atau teruk di bahagian bawah badan	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju

B15	Which activities you are limited by your back pain? / Aktiviti apa yang merupakan kekangan akibat sakit belakang?						
B15a	Vigorous activities, such as running, lifting heavy objects, participating in strenuous sports / Aktiviti bertenaga seperti berjalan, mengangkat objek berat, mengambil bahagian dalam sukan yang lasak	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
B15b	Moderate activities, such as moving a table, pushing a vacuum cleaner / Aktiviti yang sederhana, seperti memindahkan meja, menolak pembersih vakum	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
B15c	Lifting or carrying groceries / Mengangkat atau membawa barangan runcit	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
B15d	Climbing several flight of stairs / Naik beberapa anak tangga	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
B15e	Climbing one flight of stairs / Naik satu anak tangga	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
B15f	Bending, kneeling or stooping / Membengkok, berlutut atau membongkok	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju

		Sangat Tidak Bersetuju		Hampir Tidak Setuju			
B15g	Walking more than 1 kilometer / Berjalan lebih daripada 1 kilometer	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
B15h	Walking half a kilometre / Berjalan setengah kilometer	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
B15i	Walking 100 M / Berjalan 100 M	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
B15j	Bathing or dressing myself / Mandi atau memakai pakaian	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju

Section C: Back pain in past 12 months

C1	You had pain or ache in your back during last 12 months. Anda mengalami kesakitan atau sakit belakang dalam tempoh 12 bulan lepas.	Yes / Ya ()	No / Tidak ()				
C2a	You have back pain or ache on most days every month during the past year. / Anda mengalami sakit belakang atau sakit pada kebanyakan hari setiap bulan sepanjang tahun lalu.	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
C2b	How many separate attacks of back pain or ache have you had during the past 12 months / Berapa banyak serangan sakit belakang atau sakit yang pernah Anda alami sepanjang 12 bulan yang lalu.	1 attack / 1 serangan ()	3 attacks / 3 serangan ()	More than that / lebih dari itu ()			
C3	When your back pain or ache was at its worst during the past 12 months, You have difficulty in carrying out any of the following activities / Apabila sakit belakang atau sakit paling teruk dalam tempoh 12 bulan yang lalu, Anda mengalami kesukaran untuk menjalankan mana-mana aktiviti berikut						
		1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
C3a	Walking / Berjalan	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju

C3b	Sitting / Duduk	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
C3c	Standing / Berdiri	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
C3d	Lying / Baring	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
C3e	Dressing themselves / Memakai pakaian	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
C3f	Stooping / Membongkok	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
C3g	Climbing stairs / Mendaki tangga	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
C3h	Getting out of a chair / Turun dari kerusi	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju

C4a	I was absent from my work due to back pain during the past 12 months. Pernahkah Anda bercuti sakit kerana sakit belakang selama 12 bulan yang lalu.	Yes / Ya ()	No / Tidak ()				
C4b	What was the duration of absenteeism from work? / Berapakah tempoh ketidakhadiran dari kerja?	Less than 1 month / Kurang dari 1 bulan ()	1 month-3 month / 1 bulan-3 bulan ()	More than 3 month / Lebih daripada 3 bulan ()	None / Tiada		
C5	Should you received any compensation for the workdays lost due to back pain. / Patutkah Anda mendapat pampasan untuk hari-hari kerja yang hilang akibat sakit belakang	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
C6	You had back pain, before the last 12 months. / Anda mengalami sakit belakang dalam tempoh 12 bulan yang lepas	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
C7	You changed job due to back pain. / Anda menukar pekerjaan kerana sakit belakang	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
C8	How much did the back pain cost for the work days lost? / Berapakah kos kerugian hari kerja yang perlu ditanggung akibat sakit belakang	Nothing / Tiada apa-apa ()	less than 1000 / kurang daripada 1000 ()	1000-5000 ()	5000-10000 ()	more than 10000 / lebih daripada 10000 ()	
C9	How much did the back pain cost for its treatment / Berapakah kos rawatan sakit belakang	Nothing / Tiada apa-apa ()	less than 1000 / kurang daripada 1000 ()	1000-5000 ()	5000-10000 ()	more than 10000 / lebih daripada 10000 ()	

Section D: Health care services utilized

D1a	You sought consultation with any doctor for back pain / Anda mendapatkan nasihat dengan mana-mana doktor untuk sakit belakang?	Yes / Ya ()	No / Tidak ()			
D1b	You consulted for my back pain / Anda rujuk berkaitan sakit belakang	General practitioner / Pengamal am ()	Orthopaedic doctor / Doktor Ortopedik ()	Neurosurgeon / Pakar Saraf ()	Physiotherapist / Fisioterapi ()	Do not know / Tidak Pasti ()
D2	Any other / Pengamal lain	Naturopathy / Naturopati ()	Bone setters / Seting tulang ()	Acupuncture / Akupunktur ()	Magneto therapy / Terapi Magneto ()	Ceragem ()
		Raiky / Rawatan tenaga tangan ()	Yoga / Senaman Badan ()	Self-medication / Ubat sendiri ()	Massage / Urut ()	No consultation / Tiada perundingan ()
D3	What type of treatment have you undergone for back pain? / Apakah jenis rawatan yang Anda lalui untuk sakit belakang?	Bed rest / Rehat di atas katil ()	Medicine / Ubat ()	Back support / Sokongan belakang ()	Exercises / Senaman ()	Electrotherapy ()
		Surgery / Pembedahan ()	Any other / Lain lain ()	No treatment / Tiada rawatan ()		
D4	What type of investigations you have been advised for back pain? / Jenis pemeriksaan untuk sakit belakang Anda?	Magnetic resonance imaging (MRI) ()	X ray ()	Blood / Darah ()	Any other / Lain lain ()	None / Tiada ()

Section E: Physical factors at work

Circle the right answer / Bulat pada jawapan yang betul.

Answer Scale / Skala Jawapan : 1 – Strongly Disagree / Sangat Tidak Bersetuju, 2 – Disagree / Setuju, 3 – Slightly disagree / Hampir Tidak Setuju, 4 – Slightly Agree / Hampir Setuju, 5 – Agree / Setuju, 6 – Strongly Agree / Sangat Setuju

E1	You believe that physical activities at work are dangerous for your back. / Anda percaya bahawa aktiviti fizikal di tempat kerja berbahaya untuk tulang belakang	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
E2	You believe that inadequate rest intervals at work are a cause of your back pain. / Anda percaya bahawa selang masa rehat yang tidak mencukupi di tempat kerja adalah penyebab sakit belakang Anda.	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
E3	You believe that shortage of staff at work is contributing to back pain. / Anda percaya bahawa kekurangan kakitangan di tempat kerja menyumbang kepada sakit belakang.	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju

E4	Does your work involve the following / Adakah kerja Anda melibatkan yang berikutan						
E4a	Frequent bending / Kerap membongkok	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
E4b	Lifting objects / Mengangkat objek	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
E4b1	Up to 5 kg / Sehingga 5 kg	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
E4b2	25 kg above / 25 kg keatas	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
E4c	Sustained sitting / Duduk yang berterusan	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
E4d	Sustained standing / Berdiri yang berterusan	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju

Section F: Psychosocial factors

	Jawapan	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
F1	You are asked to do too much work / Anda diminta melakukan kerja yang terlalu banyak	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
F2	You have to work very hard / Anda perlu bekerja keras	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
F3	You enjoy my work / Anda suka kerja Anda	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
F4	You have enough time to get your work done / Anda mempunyai masa yang mencukupi untuk menyelesaikan kerja Anda	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
F5	You am asked to fulfill unrealistic targets / Anda diminta memenuhi sasaran yang tidak realistik	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
F6	You have to do a lot of monotonous work / Anda perlu melakukan banyak kerja yang membosankan	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
F7	Your job allows you to be creative / Pekerjaan Anda membolehkan Anda menjadi kreatif	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju

F8	Your job allows you to learn new things / Tugas Anda membolehkan Anda belajar perkara baru	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
F9	You have a lot of freedom to decide how you do your work / Anda mempunyai banyak kebebasan untuk membuat keputusan bagaimana Anda melakukan kerja Anda.	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
F10	You fear loss of job / Anda takut kehilangan pekerjaan	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
F11	Your colleagues are helpful to you / Rakan Anda membantu Anda	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
F12	Your supervisor is helpful to you / Penyelia Anda membantu Anda	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
F13	You feel lack of opportunity for promotion / Anda tidak berpeluang untuk kenaikan pangkat	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
F14	You feel being over skilled for the job / Anda sangat mahir dalam pekerjaan ini	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
F15	You feel lack of job satisfaction / Anda kurang berpuas hati mengenai kerja ini	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju

F16	You believe that my income is adequate for your work / Anda percaya bahawa pendapatan Anda setimpal dengan kerja Anda	Adequate / Memadai ()	Slightly inadequate / Tidak mencukupi ()	Severely inadequate / Sangat tidak mencukupi ()			
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Section G: General health

G1	My general health status is / status kesihatan Anda pada umumnya	Very poor / Sangat teruk ()	Poor / Teruk ()	Fair / Biasa ()	Good / Baik ()	Very good / Sangat baik ()	
G2a	You currently smoking / Anda merokok If no go to question G2d / Jika tidak pergi ke soalan G2d	Yes / Ya ()	No / Tidak ()				
G2b	Years smoked / tahun merokok	Less than 1 year / Kurang 1 tahun	1 – 3 years / 1-3 tahun	4 – 6 years / 4- 6 tahun	More than 6 years / Lebih 6 tahun	None / Tiada	
G2c	Number of cigarettes a day / Bilangan rokok sehari	Less than 1 box / Kurang 1 kotak	1 – 2 box / 1 -2 kotak	3 – 4 box / 3 -4 kotak	5 - 6 box / 5 -6 kotak	None / Tiada	
G2d	You smoke in the past / Adakah Anda merokok pada masa lalu?	Yes / Ya ()	No / Tidak ()				
G3a	You chew tobacco? / Anda mengunyah tembakau?	Yes / Ya ()	No / Tidak ()				
G3b	You chew tobacco in the past. / Anda mengunyah tembakau pada masa lalu.	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
G4a	You have shortness of breath or profuse sweating during exercise / Anda mengalami sesak nafas atau berpeluh semasa bersenam	Never / Tidak pernah ()	Once a month / Sekali sebulan ()	Once a week / Sekali seminggu ()	2-3 times a week / 2-3 kali seminggu ()	4-6 times a week / 4-6 kali seminggu ()	

G4b	What type of exercise you do? / Apakah jenis senaman yang Anda lakukan?	Walking / Bejalan ()	Jogging ()	Running / Belari ()	Yoga ()	Gym work out / Senaman Gim ()	
		Any other / Lain lain ()	None / Tiada ()				
G5a	Back pain hinder my sleep? / sakit belakang mengganggu tidur malam?	Yes / Ya ()	No / Tidak ()				
G5b	Has your sleep badly affected by your low back pain / Adakah tidur Anda terjejas akibat sakit belakang sakit belakang	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju

Circle the right answer / Bulat pada jawapan yang betul.

Answer Scale / Skala Jawapan : 1 – Strongly Disagree / Sangat Tidak Bersetuju, 2 – Disagree / Setuju, 3 – Slightly disagree / Hampir Tidak Setuju, 4 – Slightly Agree / Hampir Setuju, 5 – Agree / Setuju, 6 – Strongly Agree / Sangat Setuju

When you are working, You often have to: / Semasa bekerja Saya sering perlu:							
Item No.	Item	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
1	Lift heavy loads (more than 5 kg) / Mengangkat beban berat (lebih daripada 5 kg)	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
2	Pull or push heavy loads (more than 5 kg) / Menarik dan menolak beban berat (lebih daripada 5 kg)	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
3	Carry heavy loads (more than 5 kg) / Mengangkat beban berat (lebih daripada 5 kg)	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
When you are working, You often have to lift / Semasa Anda bekerja, Anda perlu mengangkat beban semasa bekerja							
4	In an awkward posture / dalam postur yang salah/canggung	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
5	With the load far from the body / Dengan beban jauh dari badan	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
6	With twisted trunk / Dengan postur berpusing	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju

7	With the load above chest height / Dengan beban di atas paras dada	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
8	With a load that is hard to hold / Dengan beban yang sukar dipegang	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
9	With a very heavy load (more than 20 kg) / Dengan beban yang sangat berat (lebih daripada 20 kg)	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
When you are working, you often have to / Semasa Anda bekerja, Anda sering perlu :							
10	Stand for a prolonged time / Berdiri dalam tempoh masa yang lama	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
11	Sit for a prolonged time / Duduk dalam tempoh masa yang lama	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
12	Walk for a prolonged time / Berjalan dalam tempoh masa yang lama	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
13	Stoop for a prolonged time / Membongkok dalam tempoh masa yang lama	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
I work often have to: / Saya sering perlu:							
14	Bend slightly with your trunk / Bengkok sedikit badan	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
15	Bend heavily with your trunk / Bengkok badan dengan banyak	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju

16	Twist slightly with your trunk / Pusing sedikit badan	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
17	Twist heavily with your trunk / Pusing banyak badan	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
18	Bend and twist with trunk / Badan membengkok dan memusing	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
I often have to: / Saya sering perlu :							
19	Work in a slightly bent posture for a prolonged time / Bekerja dalam postur yang agak bengkok untuk tempoh masa yang lama	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
20	Work in a heavily bent posture for a prolonged time / Bekerja dalam postur yang terlalu bengkok untuk tempoh masa yang lama	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
21	Work in a slightly twisted posture for a prolonged time / Bekerja dalam postur yang agak berpusing untuk tempoh masa yang lama	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
22	Work in a heavily twisted posture for a prolonged time / Bekerja dalam postur yang terlalu berpusing untuk tempoh masa yang lama	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
23	Work in a bent and twisted posture for a prolonged time / Bekerja dalam postur yang membengkok dan berpusing untuk tempoh masa yang lama	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju

	I often have to: / Saya sering perlu :						
24	Reach with your hands and arms / Menjangkaukan dengan tangan dan lengan Saya	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
25	Hold arm under shoulder-level / Memegang tangan di bawah bahu	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
26	Hold Your arm at or above shoulder-level / Memegang lengan Saya di atas atau melepasi bahu	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
27	Exert force with hands or arms / Beri tekanan dengan tangan dan lengan	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
28	Make small movements with hands, fingers at a high Workplace / Buat pergerakan kecil dengan tangan, jari pada tempat kerja yang tinggi	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
	I often have to: / Saya sering perlu :						
29	Bend neck forwards / Bengkokkan leher ke depan	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
30	Bend neck backward / Bengkokkan leher ke belakang	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju

31	Twist neck / Memusing leher	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
32	Hold neck in a forward bent posture for a prolonged time / Posisi leher dalam postur bengkok ke hadapan untuk masa yang lama	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
33	Hold neck in a backward bent posture for a prolonged time / Posisi leher dalam postur bengkok ke belakang masa yang lama	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
34	Hold neck in a twisted posture for a prolonged time / Posisi leher dalam postur yang berpusing untuk masa yang lama	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
	I often have to: / Saya sering perlu :						
35	Bend wrists / Bengkok pergelangan tangan	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
36	Twist wrists / Pergelangan tangan berpusing	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
37	Hold wrist bent for a prolonged time / Bengkok pergelangan tangan untuk masa yang lama	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
38	Hold wrist twisted for a prolonged time / pergelangan tangan dipusingkan untuk masa yang lama	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju

	I often have to: / Saya sering perlu :						
39	Work in uncomfortable postures / Bekerja dalam postur yang tidak selesa	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
40	Work in the same postures / Bekerja dalam postur yang sama	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
	I often have to: / Saya sering perlu :						
41	Always make the same movements with trunk / Kerap melakukan pergerakan yang sama dengan badan	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
42	Always make the same movements with arms / Kerap melakukan gerakan yang sama dengan lengan	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
43	Always make the same movements with wrists / Selalu buat gerakan yang sama dengan pergelangan tangan	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
44	Always make the same movements with legs / Sentiasa buat pergerakan yang sama dengan kaki	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
	I often have to: / Saya sering perlu :						
45	Make sudden, unexpected movements / Buat pergerakan yang tiba-tiba dan tidak dijangka	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju

46	Perform short, but maximal force-exertions / Menggunakan tenaga yang sedikit tetapi dengan tekanan yang kuat	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
47	Exert great force on tools or machinery / Keluarkan daya yang kuat pada alat atau jentera	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
I often have to: / Saya sering perlu :							
48	Not enough room around to perform work properly / Tidak cukup ruang untuk melaksanakan kerja dengan sempurna	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
49	Not enough room above to perform work without bending / Perlu membongkok apabila melakukan tugas	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
I often have to: / Saya sering perlu :							
50	Difficulty in exerting enough force because of uncomfortable Postures / ukar untuk mengeluarkan tenaga yang mencukupi akibat postur badan yang tidak selesa	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
51	Too few facilities to lean on during work / Kurang kemudahan untuk saya semasa kerja	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju

52	Trouble in reaching things with tools / Masalah mencapai sesuatu menggunakan alat	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
53	Sometimes slip or fall during work / Kadangkala tergelincir atau jatuh semasa bekerja	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
54	Often have to pinch with hands during work / Kerap menggunakan jari semasa bekerja	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
55	Work experience noticeable vibrations or shocks / Bekerja dengan getaran atau kejutan	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
56	Carry vibrating tools during work / Mengguna peralatan yang bergetar semasa bekerja	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
57	Drive vehicles during work / Memandu samasa kerja	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
58	Work physically very taxing / Kerja fizikal yang memenatkan	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
59	Work experience draughts, wind / Pengalaman kerja yang sukar	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju
60	Work experience changes of temperature /	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju

	Pengalaman Suhu di tempat kerja yang terlalu panas atau sejuk						
61	Experience humid air / Pengalaman Bekerja dalam udara yang lembab	1 – Strongly Disagree / Sangat Tidak Bersetuju	2 – Disagree / Tidak Setuju	3 – Slightly Disagree / Hampir Tidak Setuju	4 – Slightly Agree / Hampir Setuju	5 – Agree / Setuju	6 – Strongly Agree / Sangat Setuju



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I would like to say thank you for your time and commitment in answering this questionnaire and with this, I can proceed to my next process in completing my research. Thank you once again.

Saya ingin mengucapkan terima kasih yang teramat kerana menjawab soalan ini, dengan ini saya boleh meneruskan proses kajian saya sehingga siap. Sekali lagi saya ingin mengucapkan terima kasih.

Yang Benar,



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